

#### IV. Claim amendments under 37 C.F.R. § 1.121

1. (Currently amended) A method to identify the a polypeptide correlating with a phenotype of interest, said method comprising:

- a) identifying a polypeptide from a first sample that is specifically recognized and bound by a serum antibody obtained binding serum selected from at least one subject with a phenotype of interest to one or more relevant cells or tissues,
- b) characterizing said polypeptide identified in (a) by one or more properties, said properties selected from the group consisting of mass, reactivity with the serum antibody, peptidase digestion pattern, enzymatic digestion pattern, peptide sequence, antigenic epitope sequence, and MALDI-TOF selection criteria,
- c) obtaining gene expression profile data for said first sample, wherein the genes in said expression profile are characterized by properties of said gene's product, said properties selected from the group consisting of specific reactivity with the serum antibody, highly expressed in said sample, little or no detectable expression in said sample, and uniquely expressed in said sample, and
- d) selecting a characterized polypeptide of step (b) that corresponds to a characterized gene of step (c), comparing lists (i) and (ii), wherein list (i) comprises a list of genes differentially expressed in said cells or tissues and list (ii) comprises a list of polypeptide characteristic data for the polypeptide that specifically recognizes and binds a serum antibody in said serum, wherein a polypeptide common to both lists correlates with the phenotype of interest, thereby identifying said polypeptide correlating with said phenotype of interest.

2. (Canceled) The method of claim 1 or 11, wherein the genes of the list (i) are characterized by properties of the gene product, wherein the said properties are selected from the group consisting of specific reactivity with the serum antibody, highly expressed in the relevant cell or tissue, little or no detectable expression in the relevant cell or tissue, and uniquely expressed in the relevant cell or tissue.

3. (Currently amended) The method of claim [[2]] 1, wherein two or more properties characterize the properties of the gene product.

4. (Currently amended) The method of claim [[2]] 1, wherein said characterization of the gene product further comprises[[ing]] the property of molecular weight.

5. (Currently amended) The method of claim 3, wherein said characterization of the gene product further comprises[[ing]] the property of molecular weight.

6. (Canceled) The method of claim 1 or 11, wherein the list (ii) of polypeptide characteristic[[s]] data is [[a]] selected from mass, reactivity with the serum antibody, peptidase digestion pattern, enzymatic digestion pattern and MALDI-TOF selection criteria.

7. (Canceled) The method of claim 6, wherein two or more properties characterize the properties of the gene product.

8. (Canceled) The method of claim 6, further comprising the property of molecular weight.

9. (Canceled) The method of claim 7, further comprising the property of molecular weight.

10. (Previously presented) The method of claim 6, wherein MALDI-TOF selection criteria are selected from the group consisting database selection, species, type of digest, number of miscleavages, molecular weight range, contamination indication, CNBr cleavage pattern, and mass accuracy.

11. (Currently amended) A method to identify the a polypeptide correlating with a phenotype of interest, said method comprising:

a) identifying a polypeptide from a first sample that is (i) specifically recognized and bound by a serum antibody obtained binding serum selected from at least one subject with a phenotype of interest to one or more relevant cells or tissues and (ii) is differentially bound or is not bound by a  
b) binding serum selected from at least one subject without said phenotype of interest to one or more relevant cells or tissues

b) characterizing said polypeptide identified in (a) by one or more properties, said properties selected from the group consisting of mass, reactivity with the serum antibody, peptidase digestion pattern, enzymatic digestion pattern, molecular weight, peptide sequence, antigenic epitope sequence, and MALDI-TOF selection criteria.

c) obtaining gene expression profile data for said first sample, wherein the genes in said expression profile are characterized by properties of said gene's product, said properties selected

from the group consisting of specific reactivity with the serum antibody, highly expressed in the sample, little or no detectable expression in the sample, and uniquely expressed in the sample, and

d) selecting a characterized polypeptide of step (b) that corresponds to a characterized gene of step (c) comparing lists (i) and (ii), wherein list (i) comprises a list of genes differentially expressed in said cells or tissues and list (ii) comprises a list of polypeptide characteristic data for the polypeptide that binds to a serum antibody differentially present or absent between the serum in (a) and the serum in (b), wherein a polypeptide common to both lists correlates with the phenotype of interest, thereby identifying said polypeptide correlating with said phenotype of interest.

12. (New) The method of claim 11, wherein two or more properties characterize the properties of the gene product.

13. (New) The method of claim 11, wherein said characterization of the gene product further comprises the property of molecular weight.

14. (New) The method of claim 1, wherein two or more samples are utilized.

15. (New) The method of claim 14, wherein said samples express the same or similar phenotypes.

16. (New) The method of claim 15, further comprising samples that do not express said same or similar phenotypes.

17. (New) The method of claim 11, wherein two or more samples are utilized.

18. (New) The method of claim 17, wherein said samples express the same or similar phenotypes.

19. (New) The method of claim 18, further comprising samples that do not express said same or similar phenotypes.

V. Summary



No fee is deemed necessary in connection with the filing of this Communication. However, if any fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 07-1074.

Date: 10/11/2005

GENZYME CORPORATION  
15 Pleasant Street Connector  
P.O. Box 9322  
Framingham, MA 01701-9322

Respectfully submitted,

A handwritten signature in cursive script, reading "Jennifer D. Tousignant".

Jennifer D. Tousignant  
Agent for Applicant  
Registration No. 54,498  
Telephone: (508) 270-2499  
Facsimile: (508) 872-5415